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THE INFLUENCE OF THE CROPS UPON BUSINESS IN AMERICA.

FLUCTUATIONS in business prosperity result from a wide assortment of causes. They are variously attributed to epidemic states of mind, to changes in legislation, to the development of new industrial processes, to the opening of new trade routes, to excesses in banking, or, again, to changes in the methods of industrial organization. With all of these factors, men may, by taking thought, foresee in some degree their movement, and in some measure may control their outcome. Business welfare in every community depends, however, very largely upon another set of factors, whose caprices none can predict and none can govern,—factors which are closely connected with conditions of weather and of temperature. As there is no country where agriculture is not pursued or where agricultural products are not used either as foodstuffs or as raw materials, there is no country where the chance conditions

of weather are not of vital consequence. Nor is the influence of the harvests confined solely to agricultural areas and occupations. It reaches far beyond the fields. It affects manufacturing and transportation interests, banking and foreign trade, and is responsible for many of the larger deviations in commercial prosperity.

The product of agriculture differs from the output of all other branches of production in being so largely independent of human regulation and so little adjustable in amount to demand. This results not merely from the dependence of the harvests upon meteorologic conditions, over which man obviously has neither control nor prophetic vision, but also from the fact that the agricultural output is in most cases produced by a far greater number of disconnected individuals. The several crops are grown upon a countless number of widely scattered farms, the owners of which in each case are of necessity ignorant for the most part of the intentions and operations of other producers. Even were there no uncertainties of weather to contend against, there would still be serious and unforeseeable maladjustments of supply because of the inability of individual producers to gauge the total output,—an inability which is obviously more marked in the case of agriculture than in either mining or manufacture.

In the following paper we shall study the influence of this peculiarly fortuitous factor upon general business, and attempt to measure the extent of its responsibility for the advances and reverses of trade in America during the past thirty or forty years.

## I.

One can easily discern four or five important ways in which general business conditions are likely to be affected by the success or failure of the crops.

(1) In the first place the size of the crops exerts a considerable influence over the community's power to purchase other goods. If the season has been successful, the farmer is almost sure to increase his expenditures, and use at least a part of his new earnings. He may build an addition to his house or erect a new barn, or he may purchase a piano or a new buggy or new house furnishings or new clothes for himself and his family. Even if he does not use all of the additions to his income himself, but deposits some of them in the banks, they will none the less help to swell the market for other goods in the hands of other customers of the bank. If, further, on account of a plentiful harvest, the prices of food and of certain sorts of clothing are reduced, another result to be expected is that people in general outside of agricultural pursuits will have more to spend upon other things. A bountiful harvest is thus significant for almost all of the occupations in a community. It involves an immediate expansion of the demand for the most varied sorts of merchandise, and the economic machine in most of its branches is apt to be stimulated to some extent through increased consumption. On the other hand, when the agricultural output fails, the farming population is at once obliged to retrench, to forego contemplated improvements in their farms, to curtail many of the usual or expected expenditures, perhaps even to withdraw deposits from banks, and so abridge the working capital of others. If, too, the prices of breadstuffs and meats rise, many of the rest of the community will have to devote a part of what they are accustomed to spend upon other things to the purchase of food. They will have to abstain from some of their usual purchases in order to buy these necessities of life. At such times, then, not only will the industries which produce primarily for the farmers feel the pinch of reduced consumption, but other industries as well, which produce objects that in ordinary

times are consumed by the masses of men. The clothing trades, for example, may be expected to feel the difference, and the liquor, tobacco, and other similar occupations are also likely to be affected.

(2) In the second place the very solvency of a large part of the agricultural population, and of those connected by business relations with them, depends to a considerable degree upon the outcome of the year's harvest. Whether or not the farmer will be able to repay loans which he has contracted, whether or not he will be able to settle his bills with tradesmen and dealers, and whether or not he can pay for his agricultural machinery and farm improvements, will in many cases be decided by the size of the crop. If the crop fails, his various creditors, the banker who has lent him money, the mortgagee of his farm, the shopkeepers from whom he has bought his supplies, and any others to whom he is indebted will either have to wait, or, if they force a settlement, will not improbably suffer losses. If these delinquencies occur upon too wide a scale, the failure in agriculture may be propagated into other fields, and bankruptcies among bankers, dealers, and manufacturers may ensue. If the harvest, on the other hand, is good, and can be marketed at profitable prices, the capital of the affiliated creditors will once more be set free and made ready for new activities.

(3) In the third place, in a country where agricultural products form an important factor in the foreign commerce, the size of the crops will exert a considerable influence upon the balance of trade and the international movement of gold. The extent of the bank reserves in the great financial centres and the contraction or expansion of general credit may in consequence depend most importantly upon the output of the season's harvests. This consideration is of peculiar concern in the United States, where until quite recently two-thirds or more of the total

exports have consisted of such produce.<sup>1</sup> When the American crops are abundant, our exports very naturally tend to increase, and gold imports are apt to occur. That in turn means large cash holdings in the banks, with, under normal conditions, the accompaniments of expanding credit and buoyant trade. When, on the other hand, the crops fail, the movement of exports and of gold swings in the contrary direction, and in that event we are apt to be confronted with dwindling bank reserves, a contingent contraction of the general credit, declining business, and less activity in trade.

(4) Again, the size of such crops as are not consumed in the locality of their production is of great significance for the transportation interests. One has only to observe the fluctuations in railway earnings month by month during the course of any normal year to realize how important a factor the harvests are in railway affairs. It is in the months of the harvests, from August to December, that railway traffic and railway earnings normally reach their highest levels, the earnings not unfrequently being thirty to 40 per cent. higher in September or October than in May or June. A bumper crop in the case of a commodity like wheat, which is so largely consumed at a long distance from the place of its production, is consequently a source of great profit to the railroads concerned, while a poor crop means diminished traffic and reduced earnings.

(5) Finally, the success or failure of certain crops is also of significance for those industries into which the crop

<sup>1</sup> Year.	Exports of agricultural products, per cent. of total exports. Per cent.	Year.	Exports of agricultural products, per cent. of total exports. Per cent.
1890 . . . . .	74.51	1898 . . . . .	70.54
1891 . . . . .	73.69	1899 . . . . .	65.19
1892 . . . . .	78.60	1900 . . . . .	60.98
1893 . . . . .	74.05	1901 . . . . .	64.62
1894 . . . . .	72.28	1902 . . . . .	62.83
1895 . . . . .	69.73	1903 . . . . .	62.73
1896 . . . . .	66.02	1904 . . . . .	59.48
1897 . . . . .	66.23	1905 . . . . .	55.03

enters as a raw material. A failure of the wheat crop will obviously depress the milling industry, and a failure of the cotton crop will curtail the earnings of the cotton factories, not only those in the vicinity of the cotton-growing States, but those in New or old England as well. A failure of the corn crop similarly will diminish the profits of cattle raising, may work injury to the packing interests, and to some extent may affect also the distillers of whiskey.

There are, then, five important ways in which the conditions of agriculture are likely to influence general business: (1) by affecting the community's consumption of other goods; (2) by affecting the solvency and credit of farmers and those engaged in dealings with them; (3) by affecting the balance of trade and the bank reserves; (4) by affecting transportation interests; (5) by affecting manufacturing interests for which the agricultural product is a raw material.

Obviously, the greater the proportion of the population of a country that is engaged in agriculture, the more severely the country will be affected by a sudden fluctuation in the crops; and, as so large a proportion of the American people are occupied with agricultural pursuits, we should naturally expect the condition of the crops to be of greater influence upon trade conditions in this than in many other countries. Those who live in the large cities or are familiar only with such infertile regions as the Atlantic seaboard are apt to forget that we are still very largely an agricultural people. According to the census of 1900, out of a total of twenty-nine million persons reckoned as gainfully occupied, more than ten millions were engaged in agricultural pursuits. That is to say, more than one-third of those engaged in gainful occupations were connected with farming of one or another sort. We should naturally expect, then, the output of agriculture to be of peculiarly intimate and conspicuous influence upon general business conditions in the United States.

## II.

At the same time there are, needless to say, other factors than the output of our farms which may affect our prosperity, and whose influence may quite outweigh the influence of our harvests.

(1) First, it will be noted that in the case of those agricultural products which belong in large degree to foreign trade the financial success or failure of the harvest in any given locality depends to some extent upon the output of the same product elsewhere. An unusually large harvest in this country, if accompanied by small harvests abroad, obviously means prosperity for the American farmers, means large exports and high prices, tends to mean incoming gold and expanding credit. But, if accompanied by excessive crops abroad and flagging demand, it means, on the other hand, extraordinarily low prices, diminished exports, and depression in agriculture, if not in general trade. We have examples of each of these situations in the period centering about 1880. In 1879 the wheat crop, the corn crop, and the cotton crop were all the greatest ever known in our history up to that time. But in England and Europe the wheat crop was a failure on account of excessive rain and cold, and in India the cotton crop was a partial failure. We had then the conditions which would naturally result in prosperity for agriculture and flourishing trade. In 1880 these conditions were repeated. All three of these crops in America exceeded even the levels of 1879, and the foreign crops again ran short. There resulted, as every one knows, a business development rapid beyond all parallels in our previous commercial history. But note the situation only two years later. The American wheat and cotton crops in 1882 exceeded even the record-breaking totals of 1880, and the corn crop was the largest, with one exception, in our history. But in that year the



countries of Europe also produced the greatest total wheat output in their history. The price of wheat in America accordingly fell, and the amount exported was strikingly diminished. The market for cotton also proved to be overstocked, and the price of cotton likewise underwent a serious decline. There was no new development of business, no great revival of prosperity after the harvests of 1882. Although the crops of wheat and cotton were the most abundant that America had ever known, the following year was one of "steadily increasing depression." So also two years later, in 1884, the American wheat and corn crops once more bulked larger than ever. All previous records for their size were broken; but here again the records of the rest of the world for output were also broken, and the price of wheat in consequence declined to the lowest level it had yet touched during the century, and the value of the total crop in the end proved less than it had been in any year since 1878. The agricultural output in America in 1884, as in 1882, would have led one to expect a fresh outburst of general activity, but the movement in the latter case as in the former was checked by the concurrent abundance abroad, and the year that followed in each case remained one of marked depression.

(2) In the second place, even where the country is blessed with the desired conjunction of domestic crop abundance and foreign crop failures, the revival of business activity may be prevented by the operation of other influences.

In 1891 the wheat crop failed everywhere in Europe, and this occurred on the top of two serious harvest shortages in 1889 and 1890. At the same time the American crop proved larger than ever,—proved larger, in fact, by one hundred million bushels than the record crop before that date. The export of grain ran even beyond the enormous exports of 1879 and 1880, and reached in the ensuing year the highest level ever known before or since. The

cotton fields also turned out by far the largest crop on record up to that time, and our exports of cotton exceeded all precedents. The corn crop was also abundant, being, with one exception, the largest ever harvested. And yet, with all these favoring conditions, with bumper crops in all lines in this country and scant crops abroad, with record-breaking shipments of wheat and cotton, with the heaviest export trade ever known in the history of our country, and the most favorable balance of trade in a decade, there was no extraordinary outburst of activity in general trade, no such expansion of business as had occurred a dozen years before under similar circumstances. No matter what we select as a gauge of prosperity, we find the same evidence of a relatively slack development in the early nineties, as compared with either the upward movement of the early eighties or that of a decade later. We may take the statistics of the per capita foreign trade, or the railway earnings per mile, or the bank clearings, or the stock exchange transactions, or the prices of commodities and securities, and we find them all telling the same story. The maximal records of the period all fell far short of those of the preceding or those of the succeeding cycle of trade. The continued agitation of the silver question and the dwindling reserves of the Treasury, presenting as they did an ominous outlook for our monetary standard, sufficed to prevent any considerable improvement in domestic trade and manufactures, such as otherwise would have resulted from the bountiful harvests and the immense export trade. American securities held abroad began to be returned in such quantities as to counteract what would naturally have been an enormously favorable balance of indebtedness; and American investors themselves hesitated from risking capital so long as Congress could not be depended upon to maintain the value of the country's money. There was no season of buoyant activity in 1891

and 1892. Trade continued sluggish. Congress had cast a deadening blight over business which even the plenteous bounty of nature was unable to overcome.

(3) A third fact is to be noted in discussing the relations of the crops to economic cycles in a country which, like the United States, ranges over a very extensive and diversified territory, and produces in different regions several very different crops. These various crops—belonging, as they do, to different latitudes and soils, subject to very unlike conditions of weather and temperature—are by no means bound to stand or fall together. An unusually small harvest in one line may be concurrent with unprecedented abundance in another. The failure of one crop may exert a depressing influence in one part of the country, and yet be more than compensated as regards the country as a whole by expanding production and flourishing activity in another.

The three most important American crops are, respectively, corn, cotton, and wheat. Corn, although it is grown in greater or less quantities throughout the country, wherever there is tillable land, and although there are few places where it is grown exclusively, is of preponderating importance in the "corn belt." This belt includes the northern parts of Ohio, Indiana, and Illinois, the whole of Iowa, and portions of Missouri, Kansas, and Nebraska. Cotton, our next most important crop, is much more rigidly restricted. It is produced exclusively in a compact strip of country, running along the Gulf States from eastern Texas, including the Carolinas on the east and parts of Arkansas and western Tennessee on the north. Wheat, like corn, is raised to some extent in all or most of the States (twenty-five raising winter wheat, nineteen spring wheat, and some both), but in this case also there is a distinct and comparatively limited area known as "the wheat region" in the north central river basin, and more

than half of the wheat raised in the country comes from the six contiguous States, Minnesota, North and South Dakota, Kansas, Nebraska, and Missouri, the first three growing spring wheat, the latter three winter wheat.<sup>1</sup>

Among these three crops may occur every conceivable combination of success and failure. The crops of the Southern States may be abundant when those of the Middle West are poor, which, for instance, was the case in 1894, when the cotton yield was enormous and the production of wheat and corn fell short of earlier levels. In 1895, on the other hand, the contrary situation occurred, and we had a very short cotton crop concurring with a record-breaking output of corn. Although the wheat and corn crops belong to somewhat the same regions, they may, nevertheless, vary diametrically from each other. You may find a small wheat crop, as in 1885, or in 1896, combined in each case with a record-breaking corn crop, or *vice versa* a record-breaking wheat crop, as in 1901, contemporaneous with a failure of the corn crop.

And so, while one might presume, from the wide prevalence of agriculture in America and its many interrelations with transportation interests, foreign trade, banking, and other occupations, that the general condition of business would follow rather closely the changes in the country's crops, one can see that such a generalization is only safe when rigidly qualified and carefully applied. One must bear in mind not only that the condition of the crops elsewhere will always affect the *value* of our domestic crops, whatever may have been their size, but also that other conditions, such as changes in financial legislation, passed or impending, may outweigh all of the influences of agriculture upon business; and, finally, one must remember that in a country as extensive as ours the effect of success or failure with any one kind of crop may always

<sup>1</sup> See the maps in the *Statistical Atlas*, 1900, plates 154, 156, 158.

be largely offset by an opposite condition with some of the other crops.

### III.

Confronted with the evidence that our several crops do not always succeed or fail in the same seasons, one naturally asks which of the crops it is whose success or failure exerts the greater influence over the conditions of general business. This is a question the solution of which is so difficult and involves the disentanglement of so many interacting factors that no one is competent to offer for it anything more decisive than a personal belief, and the best we can do here is to recall some of the points of view, most of them already mentioned, which must form the bases of that belief.

At first glance one might suppose that the crop which is most extensive, or at any rate which is most valuable, would be the one which is most influential for general business. And that would be the corn crop. Of all the industries prosecuted in this country the most considerable by far, measured by the value of its output, is corn-growing. Corn is our leading product, not only when we are speaking of agriculture, but also when we include every kind of production. Our leading crops in the year 1905, according to the estimates of the Secretary of Agriculture,<sup>1</sup> ranked as follows:—

Corn . . . . .	\$1,216 million
Milk and butter . . . . .	665 "
Hay . . . . .	605 "
Cotton . . . . .	575 "
Wheat . . . . .	525 "
Eggs . . . . .	520 "
Oats . . . . .	282 "
Potatoes . . . . .	138 "
Barley . . . . .	58 "
Tobacco . . . . .	52 "
Sugar cane and sugar beets . . . . .	50 "
Rice . . . . .	14 "

<sup>1</sup> The estimates are those made at the end of the year in question. These estimates are always changed more or less before the annual volume is published, and at times even subsequent to its issue. They are at best, as are all of the figures in this paper, only estimates, derived from multifarious sources, and liable to large errors.

With these may be compared the following estimates of the value of the output in other leading industries during the same year or during the latest year for which figures are available:—

Pig iron . . . . .	\$412 million
Coal . . . . .	439 "
Gold . . . . .	86 "
Silver . . . . .	36 "
Railroad gross receipts . . . . .	1,906 "
Railroad net earnings . . . . .	639 "

The output of corn usually bulks three or four times that of wheat; and, although the price per bushel is considerably less, the value of the corn crop not infrequently aggregates a sum more than twice that of wheat, more, too, than the total value of the crops of wheat and cotton combined.<sup>1</sup> The annual output of corn is, therefore, quite naturally regarded by many as more consequential for trade than the output of our other crops. It represents an annual income in recent years of more than a billion of dollars, so that even a small percentage of change in its dimensions means a considerable fluctuation in the income of the community, and in the community's power to consume other goods. The following table shows the difference in the estimated value of the several crops from one year to another since 1890:—

<sup>1</sup> Estimated value of the leading American crops, from reports of the Department of Agriculture (millions of dollars):—

Years.	Corn. <sup>1</sup>	Wheat. <sup>2</sup>	Cotton.	Years.	Corn.	Wheat.	Cotton.
1880 . . .	679	474	280	1893 . . .	591	213	<sup>3</sup> 263
1881 . . .	759	456	259	1894 . . .	554	225	<sup>3</sup> 262
1882 . . .	783	445	309	1895 . . .	544	237	<sup>3</sup> 269
1883 . . .	658	383	250	1896 . . .	491	310	<sup>3</sup> 287
1884 . . .	640	330	253	1897 . . .	501	428	<sup>3</sup> 294
1885 . . .	635	275	269	1898 . . .	552	392	<sup>3</sup> 260
1886 . . .	610	314	257	1899 . . .	629	319	<sup>3</sup> 357
1887 . . .	646	310	291	1900 . . .	751	323	<sup>3</sup> 469
1888 . . .	677	385	292	1901 . . .	921	467	<sup>3</sup> 414
1889 . . .	597	342	308	1902 . . .	1,017	422	<sup>3</sup> 453
1890 . . .	754	334	<sup>3</sup> 350	1903 . . .	952	443	<sup>3</sup> 587
1891 . . .	836	513	<sup>3</sup> 313	1904 . . .	1,087	510	<sup>3</sup> 586
1892 . . .	642	322	<sup>3</sup> 268	1905 . . .	1,116	518	

<sup>1</sup> Farm value December 1.

<sup>2</sup> *Ibid.*

<sup>3</sup> As reported by Henry G. Hester, secretary New Orleans Cotton Exchange.

<i>(Millions of Dollars.)</i>			
	<i>Corn.</i>	<i>Wheat.</i>	<i>Cotton.</i>
1890 . . . . .	+157	—8	+42
1891 . . . . .	+82	+179	—37
1892 . . . . .	—194	—191	—45
1893 . . . . .	—51	—109	—5
1894 . . . . .	—37	+12	—1
1895 . . . . .	—10	+12	+7
1896 . . . . .	—53	+73	+18
1897 . . . . .	+10	+118	+7
1898 . . . . .	+51	—36	—34
1899 . . . . .	+77	—73	+97
1900 . . . . .	+122	+4	+112
1901 . . . . .	+170	+144	—55
1902 . . . . .	+96	—45	+39
1903 . . . . .	—65	+21	+134
1904 . . . . .	+135	+57	—1
1905 . . . . .	+29	+8	
Total . . . . .	1,339	1,090	634
Average . . . . .	83	68	42

It will be seen that the variations in the value of the corn crop during these fifteen years have reached an average of 83 millions, those of wheat an average of 68 millions, those of cotton an average of 42 millions. The variations in the value of the corn product as estimated have not, to be sure, exceeded the variations in the value of the wheat product by as large an average as might have been expected. Yet they have been, on the whole, more extensive, and, were no other conditions than variations in crop value and their effects upon consumption to be taken into account, the out-turn of the corn-fields would be rightly regarded as of greater significance for general business than that of any of our other crops, and ought naturally be looked to as the source of more considerable trade fluctuations.

From certain points of view, however, the crop which is most largely exported might be expected to affect trade conditions the most seriously in that its fluctuations may induce changes in the balance of trade, in the international movement of gold, and in the bank reserves. A falling off in such a crop might rapidly reverse our trade balance,

causing gold exports and a reduction in the cash holdings of our financial centres, and so might produce a serious stringency in the money market, while the success of such a crop, on the other hand, would not improbably result in an inflow of gold, the swelling of the bank reserves, and so might stimulate a spirit of confidence and introduce a period of buoyant expansion.

Ranked from this point of view, the cotton crop would at first glance appear the most important; for, if corn is our leading product, cotton is our leading export.

[*Millions of Dollars.*]

Year ending June 30.	Total ex- ports of domestic produce.	Exports of raw cotton.	Exports of wheat and wheat flour.	Exports of corn and corn-meal.	Exports of live stock.	Exports of meat and dairy prod- ucts.
1890	845	250	102	43		
1891	872	290	106	18	32	139
1892	1,015	258	236	42	36	141
1893	831	188	169	25	27	139
1894	869	210	128	30	35	146
1895	793	204	95	15	35	135
1896	863	190	91	38	41	133
1897	1,032	230	115	54	43	138
1898	1,210	230	214	75	46	167
1899	1,203	209	177	70	37	175
1900	1,370	241	140	87	43	184
1901	1,460	313	166	84	52	196
1902	1,355	290	178	17	44	199
1903	1,392	316	161	41	34	179
1904	1,435	370	104	31	47	176
1905	1,491	379	44	48	46	169

The value of our cotton exports far exceeds the value of the exports of any other article. In recent years our cotton exports have attained proportions averaging more than a million dollars per day, which is two or three times the value of the wheat exported, and all the way from three to eighteen times the value of the corn exported. In fact, they constitute on the average a fourth or a fifth of the country's total exports of domestic merchandise. The exports of raw cotton during the past decade have reached an annual average value of 260 million dollars, not to mention an export of manufactured cotton averaging



22 millions, while the wheat exports, both in the form of grain and of flour, have only reached an average of 138 millions, and the corn exports only 51 millions per year. In general, we export about two-thirds of our cotton products, between 30 and 40<sup>1</sup> per cent. of our wheat, but only 3 or 4 per cent. of our corn.<sup>1</sup> Of course it will be remembered that we export a large quantity of our corn product indirectly in the form of corn-fed cattle and meat products. Of this amount we have no means of estimation, not being able to separate the stock fed upon corn from that grown upon other fodder. Of live stock we have exported during the past ten years an annual average value of 43 million dollars, including cattle, hogs, horses, mules, and sheep, and of meat, including pork, beef, and mutton, and of dairy products, we have exported an annual average of 171 million dollars. Could we estimate the amount of corn which is exported in this form, we should doubtless find corn occupying a much more important position in the export trade than is indicated by the statistics just given of direct corn exports, yet obviously a change in the size of the corn crop exerts no immediate effect upon these indirect exports, and is only registered in the commerce of subsequent years.

Cotton, then, plays the predominant rôle in our export trade, and one might readily conclude that the out-turn

<i>Per cent. of product exported.</i>				<i>Per cent. of product exported.</i>			
<i>Year.</i>	<i>Cotton.</i> <i>Per cent.</i>	<i>Wheat and</i> <i>wheat flour.</i> <i>Per cent.</i>	<i>Corn and</i> <i>corn-meal.</i> <i>Per cent.</i>	<i>Year.</i>	<i>Cotton.</i> <i>Per cent.</i>	<i>Wheat and</i> <i>wheat flour.</i> <i>Per cent.</i>	<i>Corn and</i> <i>corn-meal.</i> <i>Per cent.</i>
1880	68.47	37.38	5.46	1893	71.20	41.47	4.11
1881	67.23	31.82	3.71	1894	69.83	31.46	2.36
1882	67.20	29.33	2.58	1895	65.00	27.07	4.70
1883	67.56	26.49	2.99	1896	70.59	33.93	7.83
1884	68.96	25.86	2.95	1897	67.82	40.91	11.14
1885	64.68	26.48	3.35	1898	65.12	32.97	9.21
1886	68.71	33.66	2.48	1899	65.18	34.00	10.30
1887	65.83	26.23	1.74	1900	62.87	41.36	8.62
1888	69.33	21.31	3.57	1901	64.47	31.37	1.84
1889	68.15	22.31	4.85	1902	65.01	30.28	3.04
1890	67.36	26.60	2.15	1903	60.27	18.92	2.59
1891	65.13	36.88	3.72	1904	61.55	7.99	3.66
1892	65.99	37.20	2.89				

The figures are for the years beginning July 1 in the case of wheat and corn and for the year beginning September 1 in the case of cotton.

of the cotton crop is of greater and more immediate significance for our foreign balance than the out-turn of any other crop. An examination, however, of the trade statistics for the past fifteen years, which were just cited, reveals grounds for a different conclusion. The value of our cotton exports, enormous as the aggregate has been, has not varied from year to year as widely as the value of our exports of wheat, and not in fact so very much more widely than our comparatively small exports of corn. During this decade and a half the widest fluctuations in the cotton exports occurred between the years 1892 and 1893 and again between the years 1900 and 1901, when the variations amounted to 70 and 72 million dollars respectively; yet twice during this same period the variations in the wheat exports exceeded these figures very strikingly, between 1897 and 1898, when the wheat exports increased by 99 million, and between 1891 and 1892, when our wheat exports advanced by the amazing sum of 130 million dollars. Notwithstanding, too, the minor proportions of our corn exports, their amounts have fluctuated from one year to another almost as widely as those of cotton. The failure of the crop in 1901, for instance, diminished the exports of corn and of corn-meal by no less than 67 million dollars; and, if we turn to the indirect effects visible a year or so later in the exports of meat and cattle, we find that the exports of live stock, for instance, declined by 1903 some 18 millions below the level of 1901, and the exports of meat and dairy products fell off some 17 millions during these two years. Even in the case of corn, therefore, the ultimate effects upon the export balance of a change in the size of the crop might be shown to be more severe than in the case of cotton.

The striking preponderance of cotton over all other products in our export trade, therefore, does not prove that the amount of our annual yield of cotton is the determin-

ing factor in our trade balance. Whatever the vicissitudes of the crop, the value of our cotton exports remains less liable to violent fluctuations than the value of our less extensive wheat exports. The reason is that the price of cotton adjusts itself more closely to the size of the American crop than does the price of wheat, and this gives greater constancy both to the value of the crop as a whole and to the value of the exports. American conditions do not necessarily control the price of wheat; for, although the United States produces more wheat than any other single nation in the world, it produces less than a quarter of the world's total supply. On the other hand, this country is the source of nearly three-quarters of the world's cotton, and what the world pays for that article is virtually determined by the mutations of the American crop. When the American crops are extraordinarily abundant, the world price of cotton tends to decline, and so the aggregate values of our cotton crop and of our cotton exports seldom increase proportionally to the increase in the quantity produced and exported. In fact, the greater bulk is sometimes more than offset by the lower price, and we may have such a situation as occurred in the years 1898-99, when the crop broke all known records of output, with one exception, and yet the total value of the crop was the lowest recorded during the past eighteen years. The value of the exports, too, of that superabundant year had been exceeded many times before, and have been invariably surpassed in the subsequent years, although their amount was with a single exception the greatest ever known. Conversely, a diminution in the amount exported, because of a comparative failure of the American crops, does not necessarily involve a serious reduction in the total value of the exports. The crop of the season 1903-04 was a comparative failure, being the smallest with one exception in seven years, yet its estimated

value was more than double that of the record-breaking year 1898-99, and exceeded that of any other year by more than 100 millions of dollars. The exports of cotton in this same year of so-called crop failure, though the smallest in bulk with one exception during a decade, outdistanced the best of records in value by nearly 60 millions of dollars. The vicissitudes of the cotton crop are, therefore, not so vitally significant for our foreign trade as one might suppose from a superficial consideration of the relative amounts exported of the various crops. Any increase or decrease in the bulk of the American cotton crop is more than likely to be compensated for by a converse movement in the price of cotton, and changes in the amount exported are apt to be offset by opposite changes in value. This is much less certain to occur in the case of wheat, because of the wider area in the world over which it can be produced, and the relatively smaller contribution which America makes to the total supply, which in the end determines its price. On the whole, then, we may tentatively conclude that the success or failure of the wheat harvest, more than that of any other vegetable product, is productive of sudden and important changes in the balance of trade.

But another consideration which we saw to be influential was the extent to which the crop is transported. Very little of our enormous corn supply is carried far from the locality of its production. Most of it is fed to live stock, especially hogs and cattle, which are raised in the region where it is produced, the principal meat-producing States being those of the corn belt. Of course, a failure of the corn crop will tend eventually (in the course, perhaps, of a year or so) to reduce the shipments of cattle and meat to the seaboard and to places of consumption, but fluctuations in the corn crop have but little direct and immediate effect upon the amount of freight carried. As for

cotton, domestic means of transport are only slightly affected by the size of the crop, two-thirds of which goes abroad, the greater part directly from Southern ports at Galveston, New Orleans, and Savannah, and principally in foreign vessels. The wheat crop, on the other hand, is much more closely connected with our transportation interests, for the wheat of the Middle West is carried far and wide by rail and steamship to all ends of the country. Not only the third of our total product which is destined for export, but a great part of the grain or flour destined for domestic consumption as well, has to be shipped over considerable distances. An abundance or shortage of the wheat crop, therefore, makes at once a serious difference in the amount of railway traffic, and is at once registered in the railway earnings. One can see, then, how indirectly a wide deviation in the wheat crop, by giving a new turn to railway earnings, may affect railway construction and expenditures for railway maintenance, and so in turn may even cause some reverberations in the iron industry. As the wheat crop appeared of primary significance for our foreign trade and the bank reserves of our financial centres, so it takes first rank also from the point of view of our railway and shipping interests.

Again, we observed that the success or failure of the harvests would affect those occupations in which agricultural products entered as a raw material. As for cotton, manufacturing interests will be directly touched by variations in the cotton crop, not only in the cotton mills of Massachusetts and Rhode Island, but also in the rapidly multiplying mills of Georgia and the other Southern States. Changes in the corn supply will directly affect cattle raising, and indirectly will affect the packing interests and the distillers. Changes in the wheat supply will have their direct effect in the centres of the milling industry. The output of each of the crops is thus of great consequence

to the business interests of a particular locality; but it would be extremely difficult, looking at the country as a whole, to estimate the comparative influence of the several crops in this connection. Only a third of the cotton remains for manufacture within the country, while more than two-thirds of the wheat and over nineteen-twentieths of the corn remain; but, on the other hand, cotton passes through many more processes in the course of its manufacture, and occasions employment for much more labor and capital for a given amount, than either of the other products. And, similarly, a somewhat greater proportion of the wheat than of the corn passes through a factory or mill, and gives further employment to labor. It appears fatuous, therefore, to attempt to decide which of these crops is connected the most importantly with other industries as a source of raw material.

Looking at the question broadly and from all points of view, although the matter is not one upon which a decisive judgment can be rendered, it would appear that in the past variations in the wheat crop have probably been the most significant for general business. That crop has often been worth less than half of the value of the corn crop, and changes in its amount have probably not affected the country's general income and consumption as much; but it has been much more closely connected with the transportation interests of the country, and it has exerted a more variable and more immediate influence upon the general trade balance. The cotton crop has frequently been more valuable, and has entered in far greater proportions into our foreign trade; but the cotton product does not affect American transportation interests to a similar extent, and the value of our cotton exports has remained comparatively steady, whatever has been their amount. Of the several American crops, then, we may tentatively conclude that that of wheat is most closely

related to business at large, and that the fluctuations in its output are the most widely felt. This by no means implies that the wheat crop has always been the dominant factor in determining the measure of prosperity in trade. Numerous other influences, as we have already seen, have played from time to time the leading rôle, and there have been occasional years, as in 1884-85, when a season of profound depression in business accompanied and followed a record-breaking output of wheat, or as in 1900-01, when a period of great buoyancy and commercial advance ensued upon a deficient crop of wheat. The supposition which we have made with regard to wheat is only one of general tendency, liable, as is every influence in this world, to be overbalanced by counteracting factors.

Granting that wheat has exceeded the other agricultural products in the past as a trade-influencing factor, its continued supremacy in the future is still open to question. Conditions are continually changing, and within the past two or three years there have not been lacking indications of the diminishing importance of the wheat crop as a factor in our trade balance. Our wheat exports declined so rapidly in 1904 and 1905 that for the time being we appeared no longer in the ranks of important wheat exporters. The total wheat exports during the fiscal year 1904-05 were the smallest in our history since 1872. Whether this situation marks a permanent change or only a temporary divergence due to a succession of short crops, one cannot as yet determine. Certainly, crops which would have seemed very large ten years ago would to-day be insufficient to feed our people and leave a surplus. Many have, therefore, jumped to the conclusion that we shall never regain our place as a wheat-exporting nation, and that with the rapid increase of our population we shall produce little more grain than is necessary for home consumption. If this should prove to be the case, the influ-

ence of the wheat crop upon our foreign balance, upon gold exports, and upon bank reserves, would evidently cease to play in the future the part it has played in the past.

#### IV.

The appended chart presents graphically the story of the crops during the past thirty-five years. During that period there have occurred, along with many minor fluctuations, two great movements of industrial and commercial advance, each of amazing proportions, and each initiated by a series of extraordinarily successful harvests in America which were coincident with extraordinarily poor harvests abroad. The first was the movement from 1879 to 1882, when the country was rapidly lifted from a six-year slough of business depression to one of the most prosperous periods in its entire history. Of this movement and its causes, which are familiar facts of history, some mention has already been made. Its propelling force arose unquestionably from the coincidence of a series of crop failures abroad in 1879, 1880, and 1881,—failures for which in duration and extent, it is said, “there had been no parallel in four centuries,”<sup>1</sup>—with two successive American harvests, in 1879 and 1880, whose dimensions exceeded all precedents in all of the leading products. These conditions not only resulted in huge profits for American farmers and dealers in produce; they stimulated the earnings of the railways; they induced a favorable balance of trade and the influx of more than 200 millions of gold during the three years from 1879 to 1881; and they instigated a spirit of confidence, an expansion of demand, and an activity of exchange which carried the records of American business of every sort far beyond the highest levels known before.

The second great movement of advance is that which

<sup>1</sup> D. A. Wells, *Recent Economic Changes*, p. 6.



began in 1897, and still continues to day (1906) after nine fabulous years of prosperity and almost uninterrupted increase. This movement also originated in an extraordinarily remunerative harvest, and its unprecedented duration is doubtless in large measure due to the prolonged continuance of agricultural success. After four years of prolonged depression, during which any revival of business had been prevented by the threat of a revolutionary change in our standard currency, the way was cleared of this hindrance at last in the autumn of 1896 by the overwhelming defeat of the extremist program in the Presidential election. To this defeat the agricultural situation of that autumn contributed, as every one remembers, a decisive influence. The conjunction of a failure of the wheat crop in India with a shortage in Australia served to raise the price of American wheat from 53 cents per bushel in August to 94½ cents at the time of the election in November, upsetting the arguments of those who had advocated the unlimited coinage of silver as the only means of raising prices, and turning the electoral tide against them in several of the doubtful Middle Western States. The principle obstacle to recovery being thus removed, in the following year a strikingly favorable turn in agriculture gave the necessary fillip to trade and set the country once more on the highway of prosperity.

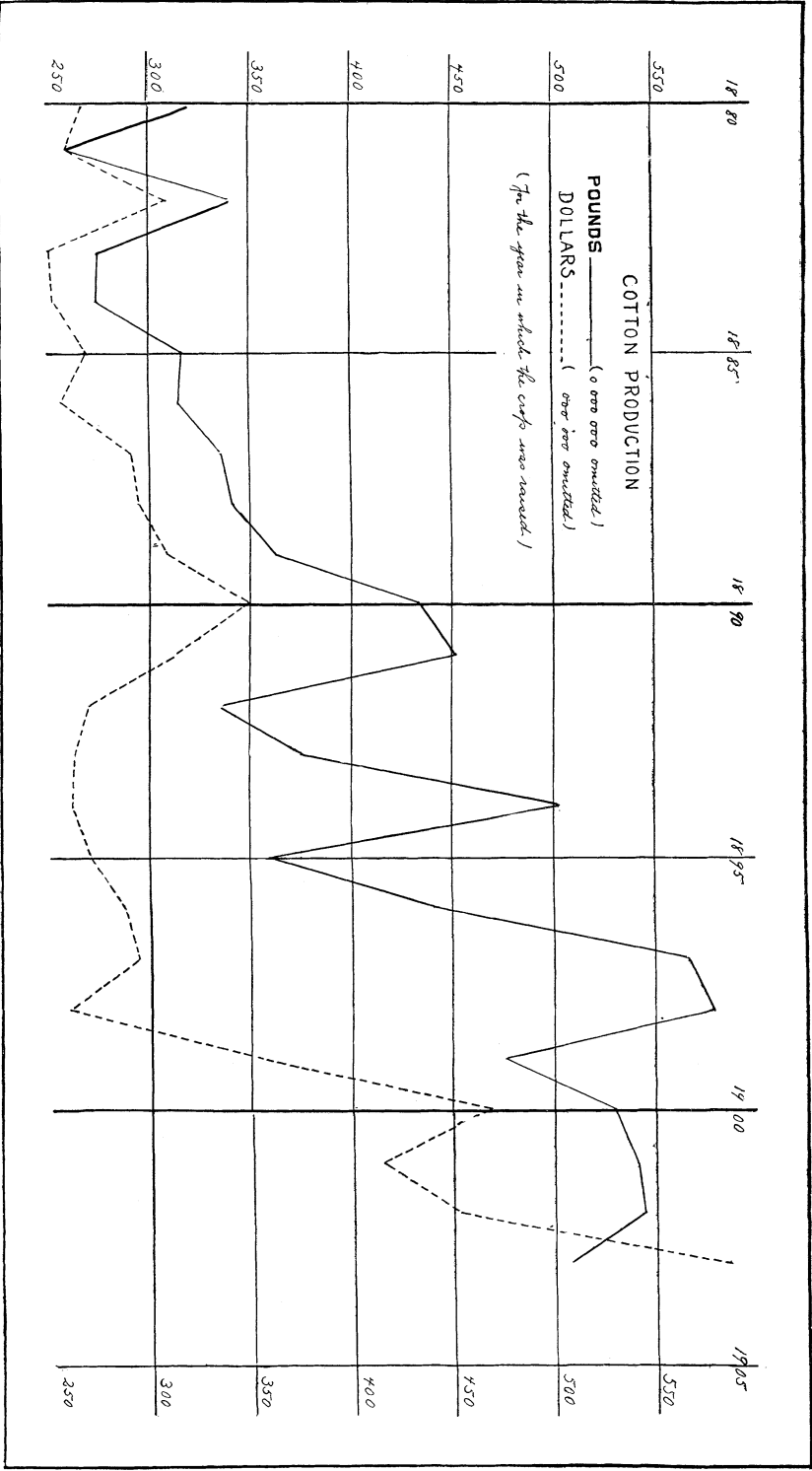
Early in the summer of 1897 it became known that the crops were again a failure in India, Australia, and in the Argentine Republic. Russia had had a poor wheat crop in 1896, and seemed likely to have another in 1897. In France on account of a scorching drought the harvest was very deficient. In Austria storms and floods had done great damage. In a word, for one reason or another, the season proved disastrous all over Europe, and the European wheat crop fell short of that of the previous year by some 350 million bushels,—a loss of about one-third.

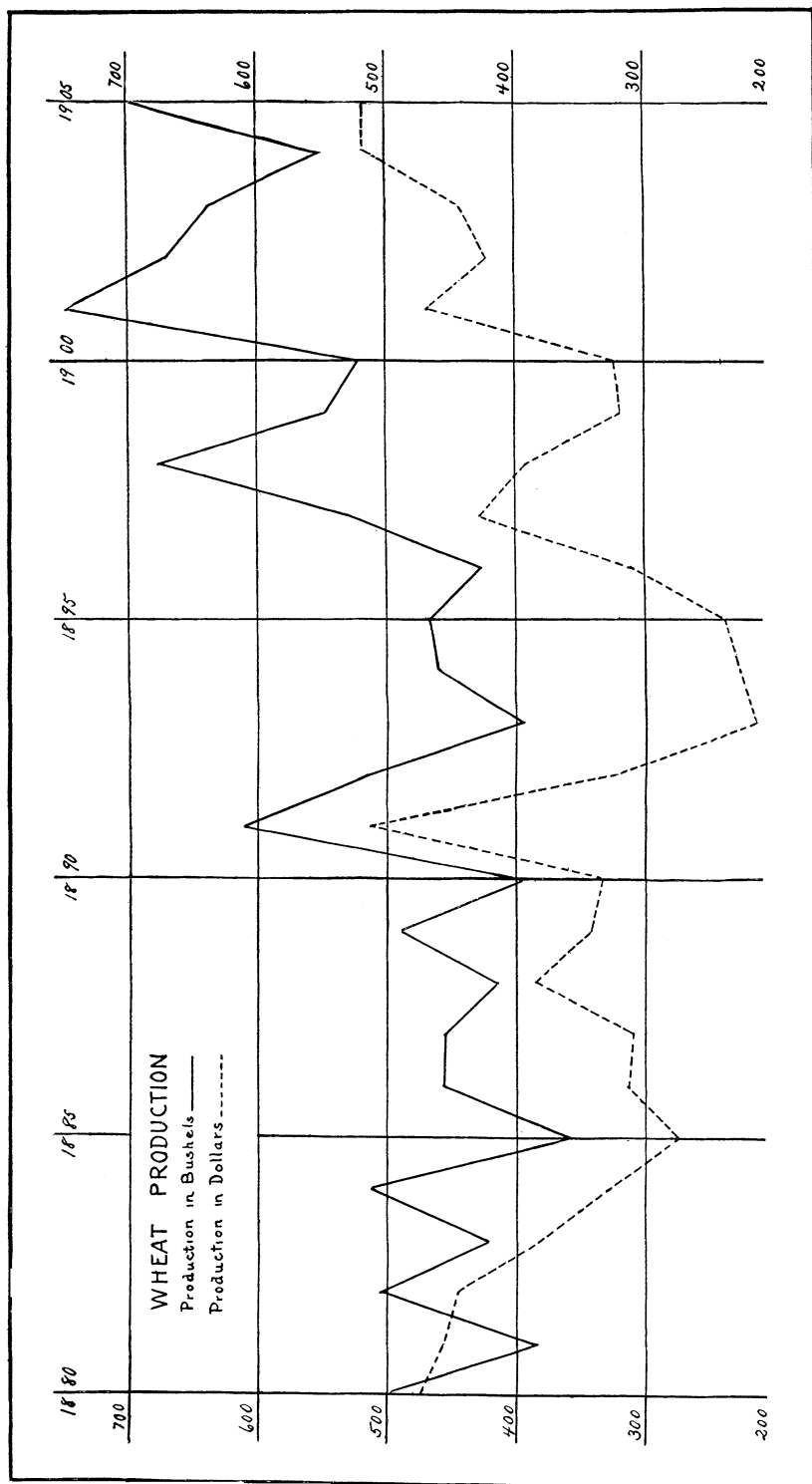
The demand for American wheat in consequence assumed new dimensions, and the price in August ran considerably above a dollar per bushel, or more than twice the price prevailing at that season a year before. The American crop, meanwhile, ran ahead of that of the previous year by 145 million bushels, and proved with one exception the largest in our history. The farmers of the Middle West got two or three times as much per bushel as they had been receiving for several years; and, as they disposed of their increased output at these much advanced prices, they were rapidly lifted from a condition of extreme depression to one of prosperous activity. They began to pay off their farm mortgages, and so set locked up capital free; and at the same time they greatly enlarged their purchases of goods. This in turn gave a stimulus to trade in the factory centres of the East, which were called upon to meet the new demand for manufactured goods. The same conditions added enormously to the tonnage and earnings of the Western railroads, opening up a new era of prosperity for them; and, as the trade of transportation is one of great importance and of wide-spread ownership, the whole country reaped an advantage.

The bearing of the crop situation of 1897 upon our foreign trade was no less important. Our exports of wheat and corn increased in the course of the year that followed by a valuation of over 120 millions of dollars, and our relations with the international market were reversed. Instead of exporting gold, we imported 142 millions. Through this movement not only was credit stimulated by the enlargement of the cash resources of the banks, but also by the new accessions to the government's gold reserve, which had been passing through the direst of vicissitudes during the years just preceding, and which now rose to the highest figure ever reached in the country's history. Great agricultural windfalls had once more set

the wheels of trade in motion and initiated a new period of prosperity.

The prolonged continuance of this upward tide beyond the term of any previous period of prosperity in the past half-century has amazed the world and aroused much speculation as to its cause. Some have attributed it to the wane of radicalism in politics and the growing conservatism of our legislatures in matters of currency and finance. Some have connected it with the increasing concentration of control in industry and transportation which has obliterated the wars between rival interests and the protracted discrepancies between supply and demand that formerly afflicted the country's business. Many have credited it to the increasing output of gold, which has almost doubled in the past ten years and more than trebled in the past twenty, and which has tended steadily to inflate bank reserves, prices, and profits. Others have attached great importance to the growing centralization of power among the New York banking interests, and the extension of their international affiliations, with the consequent increase in their ability to secure foreign assistance in times of impending trouble. Unquestionably, however, another factor not to be overlooked in explaining the longevity of the period is the persistent success of American agriculture during these recent years,—a success which, unlike that of previous periods, has for the time being depended neither upon the abundance of the American crops nor upon the failure of the crops abroad. There have been no serious crop failures in Europe since 1897, and upon several occasions since then one or another of the American crops has fallen short; yet the prosperity of American agriculture not only has remained unimpaired, but has actually advanced to ever higher and





higher levels. With regard to two of the agricultural staples of the country, cotton and wheat, the demand throughout the world has from all appearances increased more rapidly during the past half-dozen years than the output, so that in several cases, even when the harvests have shown a decline in bulk, their aggregate value has expanded.<sup>1</sup> Whether the increasing demand is the consequence of general prosperity or not is a matter of question, but certain it is that the world's consumption of these staples for some reason or other has taken on new dimensions, and, notwithstanding an increasing output, less has been produced than could have been sold with a profit. The prices of cotton and wheat during recent years have risen in consequence to levels not witnessed before for a generation, and one has to turn back to the year 1883 to find their prices averaging as high as during the past two years, 1904 and 1905. In fact, both the cotton and the wheat crops of the last three or four years have aggregated a value not far from double those of similar years a decade ago.

The agricultural situation of to-day is novel in many respects. In previous trade cycles of the past forty years, agricultural conditions in the West and the South have often tended to act as drags upon the resources of the industrial and commercial centres of the East. The farming population was poor and heavily mortgaged. They had to work very largely on credit, and to wait until the harvest before making the current year's expenditures. They had not means sufficient to harvest their own crops, much less to carry over stocks from the superabundant years to meet an anticipated shortage. Under such circumstance any considerable diminution in the crops was very apt to cause serious reaction or to prolong an existing depression. But during these late years the great farming areas, whether

<sup>1</sup>See appended charts, No. 1 and No. 2.

of the West or South, have become financially independent and prosperous as never before. Their people have lifted many of their mortgages, and now are lenders where before they were borrowers. They are much better able to cope with any temporary shrinkage in their harvests or to take care of any temporary surplus. As a matter of fact, the agricultural situation to-day, instead of being an aggravating influence in a general decline, as was the case ten or twelve years ago, has become the bulwark upon which the mercantile and financial interests of the country rely to break the force of every threatened reaction.

We have seen how all the great movements of business expansion in America during recent times have been initiated by conditions of agricultural success. It has also been true that most of the turning-points in the other direction have been preceded by agricultural failure. The year 1872, which marked the beginning of the first long period of retrenchment during the years under consideration, was preceded in the autumn of 1871 by a serious shrinkage in the cotton crop and by an appreciable decline in the crops of corn and wheat. The year 1882, which marks the beginning of the next commercial decline, ensued upon a destructive drought that extended over most of the United States, and caused a shrinkage in all of the staple crops. The crop failures of the autumn of 1881 cut down freight earnings the following year by some 45 million dollars, reduced our export trade by 150 millions, converted a favorable into an unfavorable trade balance, and resulted in the export of 32 millions of gold before the following June. They thus furnished the initiatory impulse for the long decline of the middle eighties. Turning to the early nineties, we have seen how in this complicated period the marvellously favorable crop conditions in 1891

had failed, because of political uncertainties, to stimulate a repetition of the prosperity of the resumption period. In the first months of 1892 they succeeded in swelling the tonnage of the railroads and the exports of domestic produce to tremendous volume, and so reanimated general business temporarily; but in the following autumn (1892) the crops shrank back to their former proportions. The harvests of wheat and corn and cotton all registered a decline; and, with the impetus of agricultural success removed, the country's business entered rapidly upon the downward course which culminated in the memorable crisis of 1893. All three of these periods of revulsion were preceded by, if not altogether caused by, crop shortage.

Looking back over the sweep of economic events in the United States during the past four decades, while one must admit that the influence of the crops has not always been the predominant factor in business, one can readily perceive their usual and very extended significance. The relation between agricultural success or failure and the prosperity or decline of general business has not, to be sure, proved as close and inevitable as Jevons and certain other students of crises have been inclined to believe. Crises have not ensued invariably and immediately upon every crop failure, nor have eras of upbuilding followed with clock-like regularity after every bountiful harvest. Yet one cannot review the past forty years without observing that the beginnings of every movement toward business prosperity and the turning-points toward every business decline (movements which frequently, it will be remarked, have antedated the actual outbreak of crises by several years) were closely connected with the out-turn of the crops. In other words, the presumptive relationship, for the existence of which we found abundant reason earlier in the paper, we find to be a matter of experience and historical fact.

A. PIATT ANDREW.



## THE AMERICAN CROP FOR 35 YEARS.

Year. <sup>1</sup>	Cotton, millions of bales. <sup>2</sup>	Wheat, millions of bushels.	Corn, millions of bushels.
1870 . . . . .	4.35	235	1,094
1 . . . . .	2.97	230	991
2 . . . . .	2.93	249	1,092
3 . . . . .	4.17	286	932
4 . . . . .	3.83	308	850
5 . . . . .	4.63	292	1,321
6 . . . . .	4.47	289	1,283
7 . . . . .	4.77	364	1,342
8 . . . . .	5.07	420	1,388
9 . . . . .	5.76	448	1,547
1880 . . . . .	6.60	498	1,717
1 . . . . .	5.45	383	1,194
2 . . . . .	6.94	504	1,617
3 . . . . .	5.71	421	1,551
4 . . . . .	5.70	512	1,795
5 . . . . .	6.57	357	1,936
6 . . . . .	6.50	457	1,665
7 . . . . .	7.04	456	1,456
8 . . . . .	6.93	415	1,987
9 . . . . .	7.31	490	2,112
1890 . . . . .	8.65	399	1,489
1 . . . . .	9.03	611	2,060
2 . . . . .	6.70	515	1,628
3 . . . . .	7.54	396	1,619
4 . . . . .	9.90	460	1,212
5 . . . . .	7.15	467	2,151
6 . . . . .	8.75	427	2,283
7 . . . . .	11.1	530	1,902
8 . . . . .	11.27	675	1,924
9 . . . . .	9.43	547	2,078
1900 . . . . .	10.38	522	2,105
1 . . . . .	10.68	748	1,522
2 . . . . .	10.72	670	2,523
3 . . . . .	10.01	637	2,244
4 . . . . .	13.55	552	2,467
5 . . . . .	—	693	2,707

<sup>1</sup> The year quoted is the year in which the crop was raised; *e.g.*, in the case of cotton, the year beginning September 1.

<sup>2</sup> The bales have tended to grow heavier, and have varied from 440 to 490 lbs.

